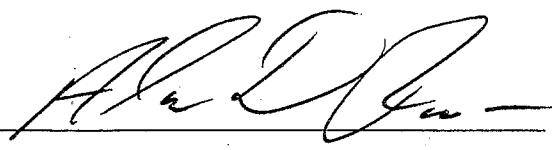
# FIELD PROCESS QUALITY CONTROL PLAN

## SPG-ANTIROCK

## NHDOT Approval

Accepted by: 

7-17-08

Date

**Inspection Procedure**
**NHDOT**

1. *Applicator Certification*
   Antirock must be applied by a Soprema Certified Applicator. All approved applicators must carry a photo I.D. displaying the Soprema logo and year of approval.

2. *Deck Acceptance*
   The waterproofing contractor will not start work on the bridge until the Soprema Inspector has inspected the deck. Items the Soprema Inspector will check for are as follows:

   A. Moisture content will be checked for conformance with the specifications. The moisture content will be checked using a moisture meter listed on the NHDOT Qualified Products List.

   B. The bridge deck and all parts to be waterproofed must conform to the specified surface profile between CSP3 and CSP5. The bridge deck should be free of moisture, ridges, hollows, and sharp objects.

   C. Patching material used on the bridge deck should be well adhered, stable, and able to withstand heavy traffic loads and is compatible with bituminous materials.

   D. The bridge deck must be clean, dry, and free of all contamination including, but not limited to concrete treatment products, lubricating oils, diesel fuel, grease, or old waterproofing products which could affect the adhesion of the waterproofing membrane or the physical integrity of the membrane itself.

   E. The bridge deck surface shall be approved by the NHDOT Engineer and the Soprema Inspector.

   F. Do not install waterproofing in rain or snow.

   G. Substrate adhesion testing shall be required as per State of New Hampshire D.O.T. specifications.

3. *Priming*

Immediately prior to application of the primer, the deck shall be cleaned by brooms and compressed air. The concrete surface shall be inspected and approved by the Engineer and the manufacturer prior to priming. Once the bridge deck has been approved by Soprema the environmental conditions such as rain, ambient air temperatures, bridge deck temperatures, relative humidity and dew points need to be approved by either the NHDOT Contract Administrator or the Independent Inspector hired by the NHDOT. Only after these conditions are approved may the waterproofing contractor begin applying the primer.

The waterproofing contractor will prime the deck with Antirock primer. The contractor will apply the primer by roller, brush or spray at a minimum application rate of one gallon per two hundred square feet.

Items the Soprema Inspector will check for during the priming are as follows:

A. The bridge deck remains dry and clean. If the bridge deck becomes wet or dirty, priming must cease until it is dried and/or cleaned.

B. 100% of the bridge deck shall be covered with primer, eliminating any skips or voids.

C. Any excess of primer on the surface or in holes of the Bridge deck, must be removed and allowed to cure prior to the installation of membrane.

D. The primer is deemed to be cured and acceptable for membrane installation when the primer is tacky to the touch.

E. The primed deck must be cured (see 2-D) before an open flame from the torch may be used. For all other safety issues see the MSDS.

4. *Membrane Installation*

The waterproofing contractor may begin membrane installation after the Soprema Inspector has approved the primed deck. The primed surface shall be relatively tack free and free of dust, debris and moisture.

This layout consists of starting the rolls of membrane at the lower side or ends of the bridge deck in a shingled pattern so that water is permitted to drain to the low areas of the deck without accumulating against seams. Laps shall be staggered at the beginning and ends of rolls and shall overlap the previous roll by six inches (6"). Side laps shall be three inches (3")

Items the Soprema Inspector will check for during the membrane installation are as follows:

A. All torching equipment is in proper working order and working safely. All connections must be tight (no propane leaking), all torches must have a regulator, flow of propane must be controller by a trigger handle and size of bell must be greater than two (2") inside diameter.

B. The certified applicator is applying the membrane using the Soprema "box system" of torching. This means that the head of the torch travels not only across the roll but also across the bridge deck just ahead of the roll. The reason is to allow the SBS in the primer to be active to accept the SBS in the membrane creating good adhesion between the deck and the roll.

C. The flow of modified asphalt in front of the roll shall be uniform across the roll and sufficient to fill all voids in the deck.

D. The flow of asphalt along the sides of the roll, aka bleed out, is to be visible with no minimum or maximum width.

E. The Soprema Inspector will check each side and end lap for a good bond to the deck prior to being lapped over by the next roll.

F. The Soprema Inspector will check each roll for any blisters, wrinkles, over torching or any other defects made during the installation. Any repairs that are required shall be done by using one of the following methods as stipulated by the Soprema Inspector: completely remove the damaged membrane and patch over the area with a new piece of membrane lapping onto the adjacent membrane with a minimum three inch (3") lap, cutting open a wrinkle or blister and sealing it back down with a torch and applying 538.4 hot modified asphalt as specified on NHDOT Quality Products List over the cut or heating a trowel and placing it under a side lap and applying pressure on the trowel to seal the lap.

G. If at any point works stops before the bridge deck is waterproofed all end and side laps will be sealed with 538.4 hot liquid modified asphalt as specified in NHDOT Quality Products List. All end and side laps shall be checked with a trowel to make sure they are sealed and watertight.

H. If any portion of the membrane becomes contaminated by gasoline, oil, diesel fuel, grease, hydraulic fuel or any other contaminants, the contaminated membrane will be cut and removed. A new membrane will be welded onto the exposed deck with a minimum three-inch lap on all adjacent membrane. NO SOLVENTS are to be used to remove contaminants.

5. *Details*

After the Soprema Inspector has inspected the membrane adjacent to these details and has found them to be satisfactorily bonded to the deck, the waterproofing contractor may begin sealing all bridge joints, curbs and drains with 538.4 hot modified asphalt as specified in the NHDOT Quality Products List. Items the Soprema Inspector will check for during the waterproofing of these details are as follows:

A. All details are primed, clean and free of moisture.

B. All membrane adjacent to the detail is well bonded and free of defects.

C. All the details shall be adequately coated with 538.4 hot modified asphalt as specified in the NHDOT Quality Products List.

D. Drains will be checked to make sure all weep holes are open to allow for proper drainage.

*6.Tack Coat*

The paving contractor may apply a tack coat after the Soprema Inspector has made a final inspection of the installed bridge deck membrane. Along with looking for any defects in the membrane the surface of the membrane should be clean and dry. The primer must be applied to the membrane within 48 hours of paving.

**NOTE:** Although not required by Soprema, NHDOT specifications require a tack coat.

*7. Paving*

A Soprema Inspector will be present for the application of the bridge base course. Items the Soprema Inspector will check for during the paving are as follows:

a. The membrane is clean, dry and undamaged by any construction activity or traffic.

b. The temperature of the pavement is at least two hundred ninety degrees Fahrenheit when it is on the deck. Temperatures in the truck may be above this when they first arrive but a slow paving crew or mechanical problems can prevent that pavement from reaching the deck at a desirable temperature.

c. Any cracks in the pavement after the roller has made its initial pass is indicative of a blister forming between the deck and the membrane. A lance should be driven into the blistered membrane at a 45-degree angle so that when the roller makes the next pass it will force the air trapped in the blister out and the heat from the pavement will adhere the membrane to the bridge deck.

8. *Troubleshooting*

Problems that may arise are identified as the following:

d. Over priming/under priming
Remove excess primer from pits, holes, and depressions in deck and reprime areas not covered sufficiently.

e. Open membrane seams
Lift edge of membrane with puller and reheat with torch or insert heated trowel in the seam and press together.

f. Blisters
If visible prior to paving cut blister in an "x", lift corners and retorch. Repairing as in #4H. If visible after paving refer to #7C.

9. *Conflict*

NHDOT specifications govern in the case of any conflict.

Neil Brown

Neil Brown

July 16, 2008

Date